

PHOTONUCLEAR DATA

VI. PHOTONUCLEAR DATA

LA150U is the only photonuclear data library supported by X-5. It is derived from work done at Los Alamos National Laboratory in the Nuclear Physics Group (LANL/T-16).

The entries in each of the columns of Table G .5 are described as follows:

ZAID	The nuclide identification number with the form ZZZAAA.nnX where ZZZ is the atomic number AAA is the mass number (000 for elements). nn is the unique table identification number. X=U for continuous-energy photonuclear tables.
Atomic Weight Ratio	The atomic weight ratio (AWR) is the ratio of the atomic mass of the nuclide to a neutron, as contained in the original evaluation and used in the NJOY processing of the evaluation.
Library	Name of the library that contains the data file for that ZAID.
Evaluation Date	The date the evaluation was officially released.
Source	The source from which the evaluated data was obtained. The abbreviation LANL/T-16 indicates that the data were produced by the Nuclear Physics Group (T-16) at Los Alamos National Laboratory.
Length	The total length of a particular photonuclear table in words.
Number of Energies	The number of energy points (NE) on the grid used for the photonuclear cross sections for that data table. In general, a finer energy grid with a greater number of points provides a more accurate representation of the cross sections.
E_{max}	The maximum incident photon energy in MeV for that data table. For all incident energies greater than E_{max} , MCNP assumes the last cross section value given.
CP	“yes” indicates that secondary charged-particles data are present; “no” indicates that such data are not present.

Table G .5
Continuous-Energy Photonuclear Data Libraries Maintained by X-5

<u>ZAID</u>	<u>AWR</u>	<u>Library Name</u>	<u>Eval. Date</u>	<u>Source</u>	<u>Length (words)</u>	<u>NE</u>	<u>E_{max} (MeV)</u>	<u>CP</u>
Z = 1 ***** Hydrogen *****								
** H-2 **								
1002.24u	1.9963	la150u	2001	LANL/T-16	3686	35	30	No
Z = 6 ***** Carbon *****								
** C-12 **								
6012.24u	11.89691	la150u	1999	LANL/T-16	50395	98	150	Yes
Z = 8 ***** Oxygen *****								
** O-16 **								
8016.24u	15.85316	la150u	1999	LANL/T-16	72930	95	150	Yes
Z = 13 ***** Aluminum *****								
** Al-27 **								
13027.24u	26.74975	la150u	1999	LANL/T-16	68599	52	150	Yes
Z = 14 ***** Silicon *****								
** Si-28 **								
14028.24u	27.737	la150u	1999	LANL/T-16	70693	60	150	Yes
Z = 20 ***** Calcium *****								
** Ca-40 **								
20040.24u	39.736	la150u	1998	LANL/T-16	67051	54	150	Yes
Z = 26 ***** Iron *****								
** Fe-56 **								
26056.24u	55.454	la150u	1998	LANL/T-16	64043	50	150	Yes
Z = 29 ***** Copper *****								
** Cu-63 **								
29063.24u	62.389	la150u	1999	LANL/T-16	73548	57	150	Yes
Z = 73 ***** Tantalum *****								
** Ta-181 **								
73181.24u	179.4	la150u	1999	LANL/T-16	85094	50	150	Yes
Z = 74 ***** Tungsten *****								
** W-184 **								
74184.24u	182.3707	la150u	1998	LANL/T-16	78439	51	150	Yes
Z = 82 ***** Lead *****								
** Pb-206 **								
82206.24u	204.2	la150u	1998	LANL/T-16	78186	49	150	Yes
** Pb-207 **								
82207.24u	205.2	la150u	1998	LANL/T-16	78259	52	150	Yes
** Pb-208 **								
82208.24u	206.19	la150u	1998	LANL/T-16	77099	51	150	Yes